

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
27 May 2004 (27.05.2004)

PCT

(10) International Publication Number  
**WO 2004/044848 A1**

(51) International Patent Classification<sup>7</sup>: **G06T 11/00**,  
A61B 6/03

(21) International Application Number:  
PCT/IB2003/004749

(22) International Filing Date: 24 October 2003 (24.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
102 52 662.1 11 November 2002 (11.11.2002) DE

(71) Applicant (for DE only): **PHILIPS INTELLECTUAL  
PROPERTY & STANDARDS GMBH** [DE/DE]; Stein-  
damm 94, 20099 Hamburg (DE).

(71) Applicant (for AE, AG, AL, AM, AT, AU, AZ, BA, BB, BE,  
BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CY, CZ, DK,  
DM, DZ, EC, EE, EG, ES, FI, FR, GB, GD, GE, GH, GM,  
GR, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,

MY, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,  
SE, SG, SK, SL, SY, SZ, TJ, TM, TN, TR, TT, TZ, UA, UG,  
UZ, VC, VN, YU, ZA, ZM, ZW only): **KONINKLIJKE  
PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoud-  
seweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

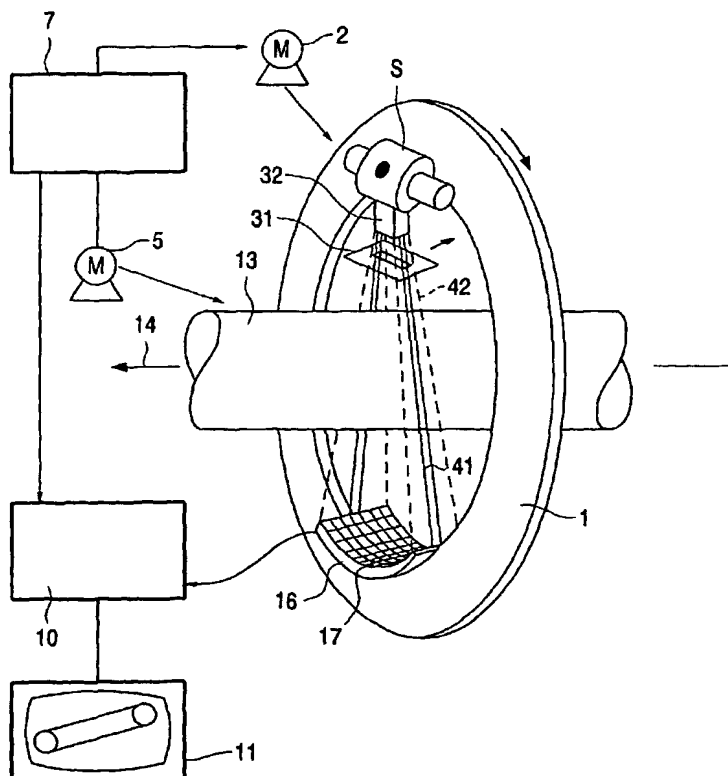
(75) Inventors/Applicants (for US only): **SCHLOMKA,  
Jens-Peter** [DE/DE]; c/o Philips Intellectual Property &  
Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).  
**GRAB, Michael** [DE/DE]; c/o Philips Intellectual Prop-  
erty & Standards GmbH, Weissshausstr. 2, 52066 Aachen  
(DE).

(74) Agent: **VOLMER, Georg**; Philips Intellectual Property &  
Standards GmbH, Weissshausstr. 2, 52066 Aachen (DE).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE,  
GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,  
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,

[Continued on next page]

(54) Title: COMPUTED TOMOGRAPHY AND METHOD WITH THREE-DIMENSIONAL BACKPROJECTION



(57) Abstract: The invention relates to a computed tomography method in which an examination zone is irradiated along a circular trajectory by a fan-shaped radiation beam. Radiation coherently scattered in the examination zone is measured by a detector unit, the variation in space of the scatter intensity in the examination zone being reconstructed from said measuring values. Reconstruction is performed by back projection in a volume which is defined by two linearly independent vectors of the rotational plane and a wave vector transfer.



MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT,  
RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**(84) Designated States (regional):** ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

**Published:**

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*